

APPENDIX G

ESSENTIAL FISH HABITAT ASSESSMENT

Revised Essential Fish Habitat Assessment
Proposed PRC-421 Pier Removal Operations
Atlantic Richfield Company
(formerly ARCO Environmental Remediation LLC)
Santa Barbara, California

In support of an Army permit application to the U.S. Army Corps of Engineers, L.A. District, and in response to the requirements of Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act, the following assessment of potential impacts to Essential Fish Habitat (EFH) has been prepared to address the proposed removal of the PRC-421 pier (the pier) and activities associated with that action. The assessment has been prepared in accordance with 50 CFR 600.920(g)(2) and addresses the managed fish and invertebrate taxa that could occur at the site within the water depth range and habitats of the proposed activities.

Proposed Actions

Project Description

The proposed project is in State Lease PRC-421, about 2 miles west of Coal Oil Point in the Santa Barbara Channel, off the coast of the County of Santa Barbara (Figure 1). The project will result in removal of the remnants of a pier and well service structure, along with associated seafloor debris, that formerly supported oil-and-gas production from two oil wells (PRC 421-7 and 421-10). The only structural remnants visible above the sea surface comprise eight 8-foot-diameter concrete and steel columns connected with riveted steel trusses that support the remains of a wooden deck. The nominal diameter of the columns is 8 feet. The eight columns form a thick "L" shape measuring about 60 by 60 feet (Figures 2 and 3). This structure is located about 850 feet offshore at a depth of about 32 feet below Mean Lower Low Water (Figure 3). The columns will be toppled below the mudline using explosives placed externally around the base of the columns. Some of the toppled columns will be moved to positions adjacent to others to reduce the footprint of the rubble pile. The resulting rubble pile will be buried under quarry rock. The height of this "artificial reef" will be up to 9 feet above the sea floor.

Before placement of the quarry rock, four pipe piles will be driven into the sea floor along the nearshore border of the toppled piles. Three steel plates with a combined area of 200 sq. ft. will be attached toward the top of each pile. These plates will provide a total roosting area of 800 sq. ft.

A substantial amount of debris on the seafloor will be removed from the area around the current remnant structure. The debris consists of: 1) steel I-beam piles that formed the bents supporting the pier leading from the PRC 421-7 well to the eight columns that

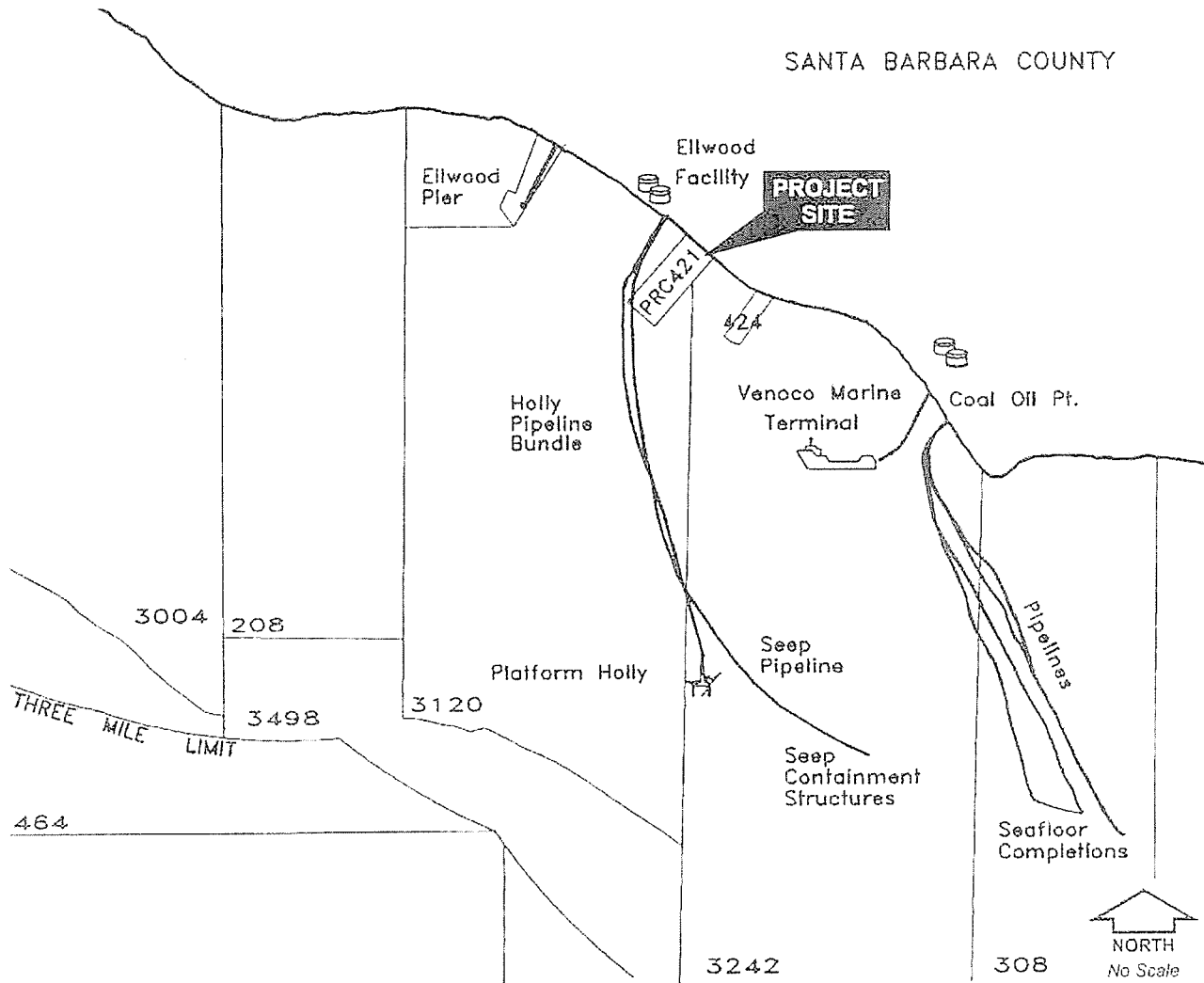


Figure 1
Vicinity Map

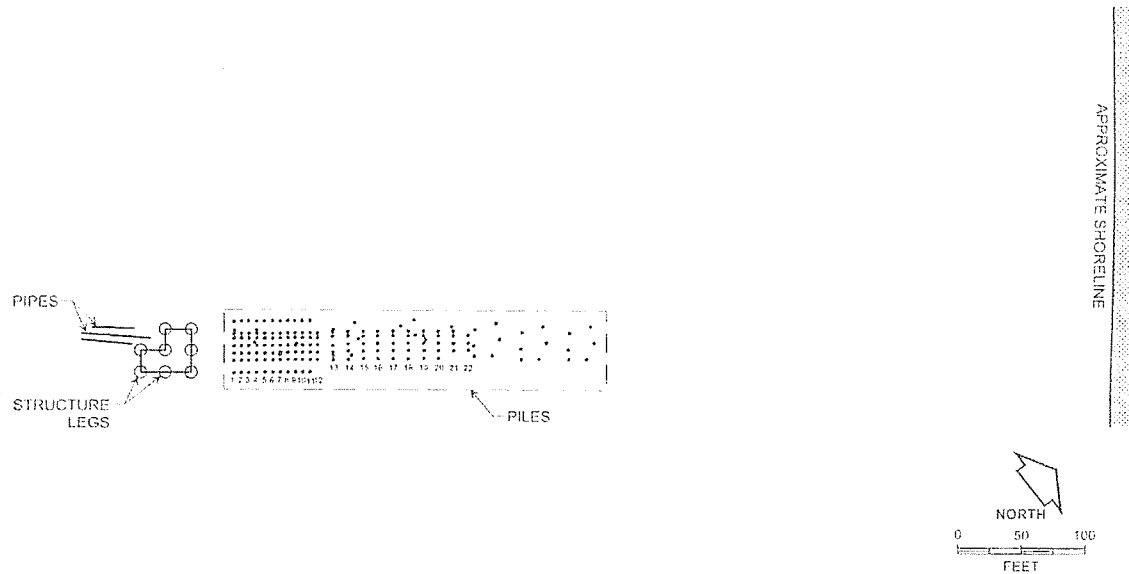


Figure 2
 Plan View with Piles and Concrete Columns

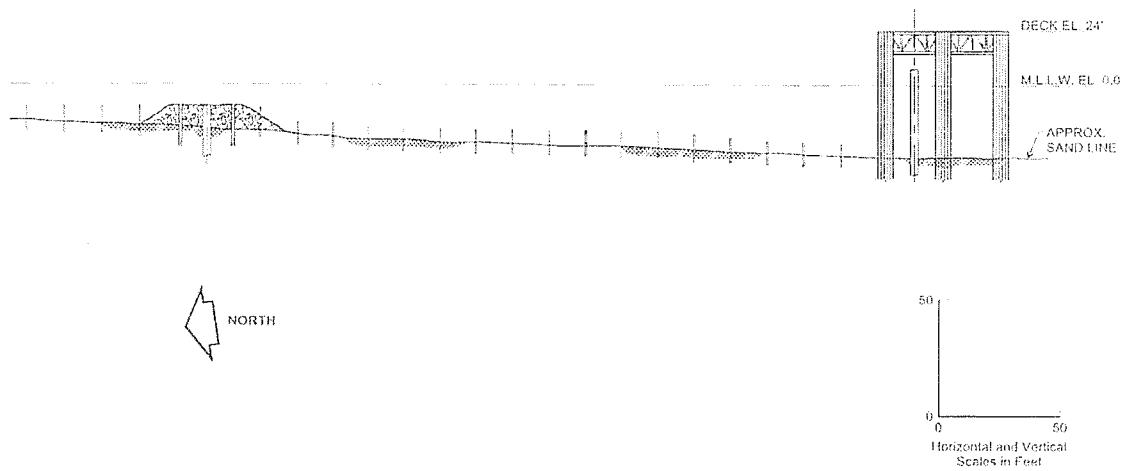


Figure 3
 Cross Section of Remnant Structure and Sea Floor

supported the pier on which the PRC 421-10 well was located; 2) miscellaneous debris in the vicinity of the former pier and well service structure; and 3) steel conductors for the two permanently plugged and abandoned wells (PRC 421-7 and 421-10). The steel I-beam piles, located inshore (northwestward) from the visible structure, and conductors will be cut off below the mudline, recovered, and transported by barge to shore for recycling.

Finally, the project will require anchoring a load line barge (with crane) offshore of the remnant structure (Figure 4). Four anchors will be deployed diagonally from the corners of the barge. The anchors, connected to the barge with anchor cables, will be located approximately 500 to 750 feet from the barge. An Anchor Mitigation and Hard Bottom Avoidance Plan has been prepared for the project and will be implemented during field work to avoid impacts on hard bottom that might be considered essential fish habitat.

Proposed Schedule

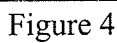
Fieldwork will begin after the end of August 2003, by which time any fledging birds will have left the platform. Work will be completed in 26 days, before the beginning of the gray whale migration period, which begins on November 30.

Site Characteristics

An understanding of site characteristics has been developed from several types of information. Videotapes and field logs recorded during engineering surveys of the structures and area in April and May 1999 (Oceaneering International (OI 1999) were reviewed. A summary of the side scan sonar data collected in the region in March 1999 (Fugro West, Inc. (Fugro) 1999) was examined. Finally, discussions about the area were initiated with Mr. George Hawkins, a commercial sea urchin diver in Santa Barbara and Mr. Shane Anderson, diving officer at UCSB.

Hard Bottom

Two types of hard bottom are located in the project area. These include natural hard bottom, which is probably mainly low siltstone outcrops or reefs, and imported boulders and rubble. A major natural hard bottom structure, identified by side scan sonar surveys by Fugro (1999), extends from south to east of the pier. These areas of hard bottom do not support an identifiable kelp bed but may be sensitive to anchoring activities. This structure probably continues considerably inshore of the surveyed area but a thick kelp bed, likely growing on the hard bottom, prevented continuation of the side scan sonar survey into this area. Other smaller areas of hard bottom were identified, one just west and another north of the pier amid and adjacent to the bents of old steel pilings that supported the pier.



FUGRO Plate 1 Showing Remnant Structure, Load Line Barge, and Anchoring Pattern.

The imported boulders and rubble are located in a rock pile approximately 300 feet inshore of the columns. This pile is approximately 50 feet in diameter X 4 feet high and the area is approximately 0.05 acres (0.02 hectares). Part of this rock was originally contained within a wall of sheet pile, which apparently remains mostly intact (OI 1999).

Soft Substrate

Plate 1 in Fugro (1999) indicates that soft substrate dominated most of the seafloor in the quadrant between the southwesterly and northwesterly axes extending from the western corners of the pier. Based on review of the OI videotapes, the soft substrate appears to be predominantly fine silty sand with small ripplemarks. This material appears similar to that observed widely at similar depths in areas west of Goleta. It is likely that sediments in the project area support similar biological assemblages to those observed in other nearby areas.

Man-made Structures

All of the man-made structures provide hard substrate. These structures comprise primarily concrete and steel in several forms (i.e., I-beams, rebar, and conductors) but in one area, the structure was formed partially of imported rock. Most of the concrete and steel structures are in poor condition. The most significant resources on these structures are the bands of mussels growing in the several feet of intertidal surface on the columns.

Managed Species of Interest

Fishes

Distribution and habitat information available in Humann (1996); Miller and Lea (1972); and Phillips (1957) was used to estimate which of the species listed in Table 1 of the EFH Primer (Helvey and Naughton 1998) could occur in the area. Species either not occurring in southern California or at depths of less than 40 feet were not included in the list included in Table 1 of this report. Habitat, depth, and distribution data were used further to estimate the relative importance of the habitat of the structures and the surrounding area for the managed species included in Table 1.

Thirty-eight of the 89 species listed as managed (i.e., managed species) by the Pacific Fishery Management Council in Table 1 of Helvey and Naughton (1998) may occur in the project area (Table 1). This includes four of five pelagic species, three of three salmonids, and 31 of 81 groundfish. For these species, the habitat is probably very marginal for approximately 55 percent, marginal for 26 percent, important for 8 percent, and primary for 11 percent. The managed species for which the project area may provide

Table 1. List of Pelagic Fishes, Salmonids, and Groundfishes Managed by NMFS and Potentially Occurring in Project Area*

Common Name	Species Name	Habitat Rank [†]	Common Name	Species Name	Habitat Rank [†]
PELAGICS					
Northern anchovy	<i>Engraulis mordax</i>	VM	Pacific sardine	<i>Sardinops sagax</i>	VM
Pacific mackerel	<i>Scomber japonicus</i>	VM	Jack mackerel	<i>Trachurus symmetricus</i>	VM
SALMONIDS					
Chinook salmon	<i>Oncorhynchus tshawytscha</i>	VM	Coho salmon	<i>Oncorhynchus kisutch</i>	VM
Pink salmon	<i>Oncorhynchus gorbuscha</i>	VM			
GROUNDFISH					
Butter sole	<i>Isopsetta isolepis</i>	M	Flathead sole	<i>Hippoglossoides elassodon</i>	M
Pacific sanddab	<i>Citharichthys sordidus</i>	VM	Sand sole	<i>Psettichthys melanostictus</i>	M
Starry flounder	<i>Platichthys stellatus</i>	M	Ratfish	<i>Hydrolagus colliei</i>	VM
Leopard shark	<i>Triakis semifasciata</i>	I	Soupfin shark	<i>Galeorhinus zyopterus</i>	VM
Spiny dogfish	<i>Squalus acanthias</i>	VM	Big skate	<i>Raja binoculata</i>	VM
Shortbelly rockfish	<i>Sebastes jordani</i>	VM	Widow rockfish	<i>Sebastes entomelas</i>	VM
Black rockfish	<i>Sebastes melanops</i>	VM	Black-and-yellow rockfish	<i>Sebastes chrysomelas</i>	I
Blue rockfish	<i>Sebastes mystinus</i>	VM	Bocaccio	<i>Sebastes paucispinis</i>	VM

Brown rockfish	<i>Sebastes auriculatus</i>	I	Canary rockfish	<i>Sebastes pinniger</i>	M
Copper rockfish	<i>Sebastes caurinus</i>	M	Gopher rockfish	<i>Sebastes carnatus</i>	M
Grass rockfish	<i>Sebastes rastrelliger</i>	P	Kelp rockfish	<i>Sebastes atrovirens</i>	P
Olive rockfish	<i>Sebastes serranoides</i>	VM	Treefish	<i>Sebastes serripes</i>	M
Yellowtail rockfish	<i>Sebastes flavidus</i>	VM	California scorpionfish	<i>Scorpaena guttata</i>	P
Cabezon	<i>Scorpaenichthys marmoratus</i>	P	Kelp greenling	<i>Hexagrammos decagrammus</i>	M
Lingcod	<i>Ophiodon elongatus</i>	M	Pacific whiting	<i>Merluccius productus</i>	VM
Sablefish	<i>Anoplopoma fimbria</i>	VM			

* Based on interpretation of information in Miller and Lea (1972), Phillips (1957), and Humann (1996).

† VM = Very Marginal; M = Marginal; I = Important; P = Primary

important habitat include: leopard shark, and black-and-yellow and brown rockfish. The managed species for which the project area provides primary habitat include: grass and kelp rockfish, California scorpionfish, and cabezon.

Discussions with other individuals familiar with fisheries resources in the region were used to supplement the information in Table 1. David Ono (California Dept. of Fish and Game) provided data from a CDF&G sportfish catch survey spanning from 1986 through 1989. The data for Ellwood and Naples Reef, summarized in Table 2, confirm that several of the managed species are common in the area. These include the pelagic Pacific mackerel and several groundfish (i.e., kelp, brown, gopher, copper, black-and-yellow, grass, and olive rockfish, treefish, cabezon, and lingcod). However, the managed species comprise only a small fraction of the total fish caught in these areas. Kelp bass, a species not managed by NMFS, dominated the catch. Based on these data, it appears that Naples Reef is far more productive overall, but that Ellwood produces more of the managed species (Table 2).